



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	)	Group Art Unit: Unassigned
Bryan Koene et al.	)	Examiner: Unassigned
Application No.: 10/594,028	)	Confirmation No.: Unassigned
Filing Date: September 25, 2006	)	
Title: TRIMETASPHERES FOR ION	)	
SELECTIVE MEMBRANES	)	

**SECOND  
INFORMATION DISCLOSURE STATEMENT  
TRANSMITTAL LETTER**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:


Enclosed is a SECOND Information Disclosure Statement (IDS) and accompanying form PTO-1449 for the above-identified patent application.

- ☒ No additional fee for submission of an IDS is required.
- ☐ The fee of 180 as set forth in 37 C.F.R. § 1.17(p) is also enclosed.
- ☐ A statement under 37 C.F.R. § 1.97(e) is also enclosed.
- ☐ A statement under 37 C.F.R. § 1.97(e), and the fee of 180 as set forth in 37 C.F.R. § 1.17(p) are also enclosed.
- ☐ Charge \_\_\_\_\_ to Deposit Account No. 02-4800 for the fee due.
- ☐ A check in the amount of \_\_\_\_\_ is enclosed for the fee due.
- ☐ Charge \_\_\_\_\_ to credit card for the fee due. Form PTO-2038 is attached.
- ☒ The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in duplicate.

Respectfully submitted,

BUCHANAN INGERSOLL AND ROONEY PC

Date April 9, 2007

By:   
Christopher L. North  
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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. § 1.56, the accompanying information is being submitted in accordance with 37 C.F.R. §§ 1.97 and 1.98. Pursuant to 37 C.F.R. § 1.98, a copy of each of the documents cited is enclosed. However, copies of the listed U.S. patents and U.S. patent application publications are not enclosed since it is no longer required according to the July 11, 2003 waiver of the requirement for copies of cited U.S. patents and U.S. patent application publications in national patent applications filed after June 30, 2003 and international applications entering the national stage under 35 U.S.C. § 371 after June 30, 2003.

**U.S. PATENT DOCUMENTS**

1. ELIAS, U.S. Patent Publication No. 5,928,807, issued on July 27, 1999.
2. DORN et al., U.S. Patent Publication No. 2004/0054151 A1, published on March 18, 2004.
3. SAVINELL et al., U.S. Patent Publication No. 5,525,436, issued on June 11, 1996.
4. KAWAMURA et al, U.S. Patent No. 6,706,431 B1, issued on March 16, 2004.
5. WHEWELL, U.S. Patent No. 5,269,953, issued on December 14, 1993.
6. HINOKUMA et al., U.S. Patent Publication No. 6,495,290 B1, published on December 17, 2002.
7. ATA et al., U.S. Patent No. 6,815,067 B2, issued on November 9, 2004.
8. EKLUND, U.S. Patent No. 5,453,413, issued on September 26, 1995.
9. KAJIURA et al., U.S. Patent Publication No. 2003/0015414 A1, published on January 23, 2003.

10. TAKIKAWA et al, U.S. Patent Publication No. 2002/0061638 A1, published on May 23, 2002.

11. ANAZAWA et al., U.S. Patent Publication No. 2001/0050219 A1, published on December 13, 2001.

12. ZETTL et al., U.S. Patent No. 6,063,243, issued on May 16, 2000.

13. CRESPI et al., U.S. Patent Publication No. 2005/0067349 A1, published on March 31, 2005.

### **NON-PATENT LITERATURE DOCUMENTS**

1. IEZZI, ERICK B. ET AL., "A Symmetric Derivative of the Trimetallic Nitride Endohedral Metallofullerene,  $\text{Sc}_3\text{N@C}_{80}$ ," J.AM.CHEM.SOC., 2002, pp. 524-525, Vol. 124, No. 4, American Chemical Society.

2. KRATSCHEMER, W. ET AL., "Solid  $\text{C}_{60}$ : a new form of carbon," NATURE, 9/27/90, pp. 354-358, Vol. 347, Nature Publishing Group.

3. OLMSTEAD, MARILYN M. ET AL., "Isolation and Crystallographic Characterization of  $\text{ErSc}_2\text{N@C}_{80}$ : an Endohedral Fullerene Which Crystallizes with Remarkable Internal Order," J.AM.CHEM.SOC., 2000, pp. 12220-12226, Vol. 122, No. 49, American Chemical Society.

4. STONE, A.J. ET AL., "Theoretical Studies of Icosahedral  $\text{C}_{60}$  and Some Related Species," Chem. Physics Ltrs., 8/8/86, pp. 501-503, Vol. 128, No. 5,6, Elsevier Science Publishers B.V.

5. TRULOVE, "Filled buckyballs - diamonds from soot," article from website <http://www.research.vt.edu/resmag/2002winter/buckyballs.html>, 9 March 2002 (09.03.2002), available at [www.archive.org](http://www.archive.org). (entire document).

6. JOURNET et al., "Large-scale production of single-walled carbon nanotubes by the electric-arc technique," *Nature*, 1997, vol. 388, pp. 756-758, American Association for the Advancement of Science, Washington, D.C.

7. SAITO et al., "Single-Layered Carbon Nanotubes Synthesized by Catalytic Assistance of Rare-Earths in a Carbon Arc," *J. Phys. Chem.*, 1995, vol. 99, pp. 16076-16079, American Chemical Society, Washington, D.C.

8. WILSON et al., "Advanced materials: fluoruous fullerenes and nanotubes," *Tetrahedron*, 2002, vol. 58, pp. 4041-4047, Elsevier Science Ltd.

9. NICE, "How Fuel Cells Work", article from website <http://science.howstuffworks.com/fuel-cell.htm>, 2004, pp. 1-7.

The documents are being submitted within three (3) months of the filing or entry of the national stage of this application or before the first Office Action on the merits, whichever is later. Since these documents are being filed within the time period set forth in 37 C.F.R. § 1.97(b), no fee or statement is required.

To assist the Examiner, the documents are listed on the attached form PTO-1449. It is respectfully requested that an Examiner initialed copy of this form be returned to the undersigned.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: April 9, 2007

By:



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**SECOND**  
**INFORMATION DISCLOSURE**  
**STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 1

Application Number	10/594,028
Filing Date	September 25, 2006
First Named Inventor	KOENE et al.
Examiner Name	Unassigned
Attorney Docket No.	1034136-000039



**U.S. PATENT DOCUMENTS**

Examiner Initials	Document Number	Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Issue/Publication Date (MM-DD-YYYY)
	5,928,807		Elias	07-27-1999
	2004/0054151	A1	Dorn et al.	03-18-2004
	5,525,436		Savinell et al.	06-11-1996
	6,706,431	B2	Kawamura et al.	03-16-2004
	5,269,953		Whewell	12-14-1993
	6,495,290	B1	Hinokuma et al.	12-17-2002
	6,815,067	A	Ata et al.	11-09-2004
	5,453,413	A	Eklund	09-26-1995
	2003/0015414	A1	Kajiura et al.	01-23-2003
	2002/0061638	A1	Takikawa et al.	05-23-2002
	2001/0050219	A1	Anazawa et al.	12-13-2001
	6,063,243		Zettl et al.	05-16-2000
	2005/0067349	A1	Crespi et al.	03-31-2005

**NON-PATENT LITERATURE DOCUMENTS**

Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	IEZZI, ERICK B. ET AL., "A Symmetric Derivative of the Trimetallic Nitride Endohedral Metallofullerene, Sc <sub>3</sub> N@C <sub>80</sub> ," J.AM.CHEM.SOC., 2002, pp. 524-525, Vol. 124, No. 4, American Chemical Society
	KRATSCHMER, W. ET AL., "Solid C <sub>60</sub> : a new form of carbon," NATURE, 9/27/90, pp. 354-358, Vol. 347, Nature Publishing Group
	OLMSTEAD, MARILYN M. ET AL., "Isolation and Crystallographic Characterization of ErSc <sub>2</sub> N@C <sub>80</sub> : an Endohedral Fullerene Which Crystallizes with Remarkable Internal Order," J.AM.CHEM.SOC., 2000, pp. 12220-12226, Vol. 122, No. 49, American Chemical Society
	STONE, A.J. ET AL., "Theoretical Studies of Icosahedral C <sub>60</sub> and Some Related Species," Chem. Physics Ltrs., 8/8/86, pp. 501-503, Vol. 128, No. 5,6, Elsevier Science Publishers B.V.
	TRULOVE, "Filled buckyballs - diamonds from soot," article from website <a href="http://www.research.vt.edu/resmag/2002winter/buckyballs.html">http://www.research.vt.edu/resmag/2002winter/buckyballs.html</a> , 9 March 2002 (09.03.2002), available at <a href="http://www.archive.org">www.archive.org</a> . (entire document).
	JOURNET et al., "Large-scale production of single-walled carbon nanotubes by the electric-arc technique," <i>Nature</i> , 1997, vol. 388, pp. 756-758, American Association for the Advancement of Science, Washington, D.C.
	SAITO et al., "Single-Layered Carbon Nanotubes Synthesized by Catalytic Assistance of Rare-Earths in a Carbon Arc," <i>J. Phys. Chem.</i> , 1995, vol. 99, pp. 16076-16079, American Chemical Society, Washington, D.C.
	WILSON et al., "Advanced materials: fluorous fullerenes and nanotubes," <i>Tetrahedron</i> , 2002, vol. 58, pp. 4041-4047, Elsevier Science Ltd.
	NICE, "How Fuel Cells Work", article from website <a href="http://science.howstuffworks.com/fuel-cell.htm">http://science.howstuffworks.com/fuel-cell.htm</a> , 2004, pp. 1-7.

Examiner Signature	Date Considered
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.